

Claims:

Please amend the claims as follows:

1. (currently amended) A method of allocating resources on a network, comprising:

receiving a request for reservation of network resources, the reservation including a destination address on the network and a future activation time at which the resources are to be activated; and

allocating resources on network devices on a path to the destination address to accommodate the reservation if the network devices have sufficient resources to accommodate the reservation, wherein the allocating is at the future activation time, and wherein the allocating includes communicating over the network at the future activation time with at least one policy enforcement point, wherein the policy enforcement point is on the path and at an edge of the network, wherein the communicating includes configuring the at least one policy enforcement point by installing, at the future activation time, at least one internet protocol traffic filter in the policy enforcement point, wherein the installing activates the requested reservation of network resources for the destination address on the network, wherein the internet protocol traffic filter includes a matching criteria and an action, wherein the matching criteria includes at least one internet protocol network address, and wherein the matching criteria allows the policy enforcement point to identify at least one packet and to perform the action on the packet, wherein the installing at the future activation time of said at least one internet protocol traffic filter in the policy enforcement point includes determining that two nodes have requested the same service

reservation, and modifying, responsive to the determining that two nodes have requested the same service reservation, the matching criteria of a previously installed internet protocol traffic filter by replacing an internet protocol network address of the previously installed internet protocol traffic filter with a range of internet protocol network addresses to increase the number of users with access to the network without increasing the number of filters installed in the network devices.

2. (original) The method of claim 1, further comprising determining if the network devices on the path to the destination address have sufficient resources to accommodate the reservation.

3. (original) The method of claim 2, further comprising:

constructing a map of a topology of the network; and storing the map in memory; wherein determining and allocating are performed by referencing the map.

4. (original) The method of claim 3, wherein constructing is performed periodically to account for changes in the topology of the network.

5. (previously presented) The method of claim 1, further comprising:

determining if the reservation is permitted based on an identity of a transferor; and wherein allocating is performed if it is determined that the reservation is permitted.

6. (original) The method of claim 5, wherein allocating is not performed if it is determined that the reservation is not permitted.

7. (canceled)

8. (canceled)

9. (original) The method of claim 1, wherein allocating comprises allocating resources on the network devices for different classes of service on the network.

10. (original) The method of claim 9, wherein the different classes of service are defined in data packets to be transmitted over the network.

11. (original) The method of claim 1, wherein the resources comprise bandwidth of devices on the network.

12. (original) The method of claim 1, further comprising determining if the destination address is along a path having greater than a predetermined amount of bandwidth;

wherein allocating is performed based on the determining.

13. (canceled)

14. (previously presented) The method of claim 1, wherein the communicating over the network with the at least one policy enforcement point at the activation time takes place using the COPS/RSPV protocol.

15. (currently amended) A computer program stored on a computer-readable medium for allocating resources on a network, the computer program comprising instructions that cause a computer to:

receive a request for reservation of network resources, the reservation including a destination address on the network and a future activation time at which the resources are to be activated; and

allocate resources on network devices on a path to the destination address at the future activation time to accommodate the reservation if the network devices have sufficient resources to accommodate the reservation, by communicating over the network at the future activation time with at least one policy enforcement point, wherein the policy enforcement point is on the path and at an edge of the network, wherein the communicating includes configuring the at least one

policy enforcement point by installing, at the future reservation time, at least one internet protocol traffic filter in the policy enforcement point, wherein the installing activates the requested reservation of network resources for the destination address on the network, wherein the internet protocol traffic filter includes a matching criteria and an action, wherein the matching criteria includes at least one internet protocol network address, and wherein the matching criteria allows the policy enforcement point to identify at least one packet and to perform the action on the packet, wherein the installing at the future activation time of said at least one internet protocol traffic filter in the policy enforcement point includes determining that two nodes have requested the same service reservation, and modifying, responsive to the determining that two nodes have requested the same service reservation, the matching criteria of a previously installed internet protocol traffic filter by replacing an internet protocol network address of the previously installed internet protocol traffic filter with a range of internet protocol network addresses to increase the number of users with access to the network without increasing the number of filters installed in the network devices.

16. (original) The computer program of claim 15, further comprising instructions that cause the computer to determine if the network devices on the path to the destination address have sufficient resources to accommodate the reservation.

17. (original) The computer program of claim 16, further comprising instructions that cause the computer to:
construct a map of a topology of the network; and store the map in memory;
wherein determining and allocating are performed by referencing the map.

18. (original) The computer program of claim 17, wherein constructing is performed periodically to account for changes in the topology of the network.

19. (original) The computer program of claim 15, further comprising instructions that cause the computer to:

determine if the reservation is permitted based on an identity of a transferor;

wherein allocating is performed if it is determined that the reservation is permitted.

20. (original) The computer program of claim 19, wherein allocating is not performed if it is determined that the reservation is not permitted.

21. (canceled)

22. (canceled)

23. (original) The computer program of claim 15, wherein allocating comprises allocating resources on the network devices for different classes of service on the network.

24. (original) The computer program of claim 23, wherein the different classes of service are defined in data packets to be transmitted over the network.

25. (original) The computer program of claim 15, wherein the resources comprise bandwidth of devices on the network.

26. (original) The computer program of claim 15, further comprising instructions that cause the computer to determine if the destination address is along a path having greater than a predetermined amount of bandwidth wherein allocating is performed based on the determining.

27. (canceled)

28. (previously presented) The computer program of claim 15, wherein the communicating over the network with the at least one policy enforcement point at the activation time takes place using the COPS/RSPV protocol.

29. (currently amended) An apparatus for allocating resources on a network, the apparatus comprising:

a memory which stores executable instructions;

and a processor which executes the instructions to:

receive a request for reservation of network resources, the reservation including a destination address on the network and a future activation time at which the resources are to be activated; and

allocate resources on network devices on a path to the destination address at the future activation time to accommodate the reservation if the network devices have sufficient resources to accommodate the reservation, by communicating over the network at the future activation time with at least one policy enforcement point, wherein the policy enforcement point is on the path and at an edge of the network, wherein the communicating includes configuring the at least one policy enforcement point by installing, at the future reservation time, at least one internet protocol traffic filter in the policy enforcement point, wherein the installing activates the requested reservation of network resources for the destination address on the network, wherein the internet protocol traffic filter includes a matching criteria and an action, wherein the matching criteria includes at least one internet protocol network address, and wherein the matching criteria allows the policy enforcement point to identify at least one packet and to perform the action on the packet, wherein the installing at the future activation time of said at least one internet protocol traffic filter in the policy enforcement point includes determining that two nodes have requested the same service reservation, and modifying, responsive to the determining that two nodes have requested the same service reservation, the matching criteria of a previously installed internet protocol traffic filter by replacing an internet protocol network address of the previously installed internet protocol traffic filter with a range of internet protocol network addresses to increase the number of users with access to the network without increasing the number of filters installed in the network devices.

30. (original) The apparatus of claim 29, wherein the processor executes instructions to determine if the network devices on the path to the destination address have sufficient resources to accommodate the reservation.

31. (original) The apparatus of claim 30, wherein the processor executes instructions to:

construct a map of a topology of the network; and
store the map in memory wherein determining and allocating are performed by
referencing the map.

32. (original) The apparatus of claim 31, wherein constructing is performed periodically to
account for changes in the topology of the network.

33. (original) The apparatus of claim 29, wherein:

the processor executes instructions to determine if the reservation is permitted based on
an identity of a transferor; and
allocating is performed if it is determined that the reservation is permitted.

34. (original) The apparatus of claim 33, wherein allocating is not performed if it is determined
that the reservation is not permitted.

35. (canceled)

36. (canceled)

37. (original) The apparatus of claim 29, wherein allocating comprises allocating resources on
the network devices for different classes of service on the network.

38. (original) The apparatus of claim 37, wherein the different classes of service are defined in
data packets to be transmitted over the network.

39. (original) The apparatus of claim 29, wherein the resources comprise bandwidth of devices
on the network.

40. (original) The apparatus of claim 29, wherein:

the processor executes instructions to determine if the destination address is along a path

having greater than a predetermined amount of bandwidth; and
allocating is performed based on a determination made by the processor.

41. (canceled)

42. (previously presented) The apparatus of claim 29, wherein the communicating over the network at the activation time with at least one policy enforcement point takes place using the COPS/RSPV protocol.

43. (currently amended) An apparatus for allocating resources on a network, comprising:
means for receiving a request for reservation of network resources, the reservation including a destination address on the network and a future activation time at which the resources are to be activated; and
means for allocating resources on network devices on a path to the destination address at the future activation time to accommodate the reservation if the network devices have sufficient resources to accommodate the reservation, and wherein the allocating includes communicating over the network at the future activation time with at least one policy enforcement point, wherein the policy enforcement point is on the path and at an edge of the network, wherein the communicating includes configuring the at least one policy enforcement point by installing at least one internet protocol traffic filter in the policy enforcement point, wherein the installing activates the requested reservation of network resources for the destination address on the network, wherein the internet protocol traffic filter includes a matching criteria and an action, wherein the matching criteria includes at least one internet protocol network address, and wherein the matching criteria allows the policy enforcement point to identify at least one packet and to perform the action on the packet, wherein the installing at the future activation time of said at least one internet protocol traffic filter in the policy enforcement point includes determining that two nodes have requested the same service reservation, and modifying, responsive to the determining that two nodes have requested the same service reservation, the matching criteria of a previously installed internet protocol traffic filter by replacing an internet protocol network address of the previously installed internet protocol traffic filter with a range of

internet protocol network addresses to increase the number of users with access to the network without increasing the number of filters installed in the network devices.

44. (previously presented) The method of claim 1, wherein the action performed by the policy enforcement point comprises marking a packet header of the packet to assign a predetermined priority to the packet.

45. (previously presented) The method of claim 1, wherein the action performed by the policy enforcement point comprises shaping the packet.

46. (previously presented) The method of claim 1, wherein the action performed by the policy enforcement point comprises dropping the packet.

47. (cancelled)